REMARKS

A first non-final Office Action mailed October 3, 2003 has been received and carefully reviewed. Claims 1-33 are pending in the application. Original claims 1-33 have been rejected. Claims 1, 12, and 24 have been amended. New claims 34-42 have been added. Reconsideration of the application as amended and withdrawal of the present rejections are respectfully requested in view of the amendments to the claims and the following remarks.

Claims 1, 8, 10-12, 23-24, and 33 were rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over *Olsen* (US Patent 5,205,283). Claims 2-7, 9, 13-22, and 25-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Olsen*.

Olsen discloses a method and apparatus for distinguishing between stable and unstable ventricular tachyarrhythmias. *Olsen's* teachings are directed to ventricular tachyarrhythmia detection and treatment.

Applicant's claimed subject matter is directed to inhibiting delivery of atrial therapy under certain conditions. For example, Applicant's claim 1, as amended, recites calculating an average atrial rate and an average ventricular rate using representative atrial and ventricular interval rates, respectively. Delivery of atrial therapy is inhibited if the average atrial rate exceeds an atrial arrhythmia threshold and the average atrial rate fails to exceed the average ventricular rate by at least a predetermined factor.

In the Office Action, *Olsen* is relied on for teaching that, if an ACL-to-VCL ratio is 1:1, a normal beat is determined and no therapy is applied, and when the ACL exceeds the VCL a determination of flutter/fibrillation leads to atrial therapy. Reference is made to column 8, lines 65-69 and column 9, lines 1-24. The Examiner then concludes that, when the atrial rate as compared to the ventricular rate fails to exceed the factor 1, atrial therapy is inhibited.

Applicant has amended claims 1, 12, and 24 to indicate that atrial therapy delivery is inhibited if the average atrial rate exceeds an atrial arrhythmia threshold and the average atrial rate fails to exceed the average ventricular rate by at least a predetermined factor. *Olsen* fails to address inhibiting atrial therapy delivery when both an atrial arrhythmia threshold is exceeded and the average atrial rate fails to exceed the average ventricular rate by at least a predetermined factor. The teaching relied on by the Examiner appears to be operative when a "normal beat is determined" (see Office Action, page 2).

Contrary to the Examiner's characterization in the Office Action, *Olsen* fails to teach "inhibiting" atrial therapy delivery as is recited in the originally presented claims and the presently amended claims. The portion of *Olsen* relied on by the Examiner merely suggests that atrial therapy is not delivered for normal 1:1 rhythm conditions. Respectfully, *Olsen* fails to teach or suggest Applicant's claimed approach or any other approach to inhibiting delivery of an atrial therapy.

Olsen teaches that the goal of the process shown in Figure 4 "is to distinguish the tachyarrhythmias identified in blocks 112, 114, 116, 118, 120 and 122 from sinus tachycardia (block 124) and to direct the device depicted in FIG. 4 to apply the appropriate therapy or therapy regimens" (column 8, lines 29-34). Olsen, at column 8, lines 35-49, teaches that:

> For example, atrial fibrillation (block 112), atrial flutter (block 114) and unstable ventricular tachycardia (block 122) would be treated by therapies including cardioversion and or defibrillation shocks (possibly preceded by a pacing therapy). However, atrial tachycardia (block 116), paroxysmal 1:1 tachycardia (block 118) and stable ventricular tachycardia (block 120) would be treated by one or more pacing therapies or regimens of pacing therapies, possibly followed by a cardioversion or defibrillation therapy if the pacing therapies were unsuccessful. Atrial flutter (block 114) may in some cases also, initially be treated by means of pacing therapies. Sinus tachycardia (block 124) would be untreated as it would be considered nonpathologic in nature.

Olsen teaches treatment of certain identified atrial arrhythmic conditions by delivery of an appropriate therapy (e.g., cardioversion, defibrillation, and pacing therapies). *Olsen*, however, fails to teach or suggest approaches for inhibiting delivery of such therapies.

Contrary to the characterization presented in the Office Action, the *Olsen* disclosure fails to teach or suggest many of Applicant's claimed features. Differences between *Olsen's* disclosed methodology and that recited in Applicant's claims is highlighted by *Olsen's* concession that its methodology is not appropriate for use in several scenarios. At column 3, lines 28-39, *Olsen* teaches that:

> It should be noted that the present invention does not provide a method of distinguishing stable from unstable ventricular tachycardia in those circumstances in which 1:1 V-A conduction persists during the tachyarrhythmia and overdrives the atrium's intrinsic rate. For this reason, the invention is disclosed as activated primarily in those circumstances in which the atrial rate is less than the ventricular rate. The invention is preferably not employed simultaneously with pacing modes which include atrial pacing functions, as such pacing would in some cases interfere with measurement of intrinsic atrial cycle lengths. (*Emphasis added*).

New claim 34 recites features of Applicant's claims 12 and 23 and new features supported by Applicant's specification that further distinguish from the teachings of *Olsen*. Claim 34 recites a method of inhibiting atrial therapy delivery that involves inhibiting delivery of atrial therapy if the atrial rate exceeds an atrial arrhythmia threshold and the average atrial rate fails to exceed the ventricular rate by at least a predetermined factor. Claim 34 further involves enabling atrial therapy delivery, subsequent to inhibiting atrial therapy delivery, if the atrial rate exceeds the ventricular rate by at least the predetermined factor, and delivering atrial therapy if atrial therapy delivery is enabled and at least one atrial arrhythmia detection process indicates atrial therapy delivery should be delivered.

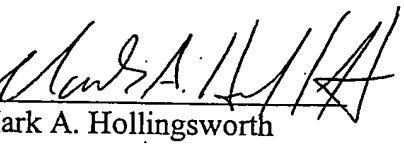
Support for new claim 34 may be found, for example, at page 12, lines 7-14. Clearly, new claim 34 is not anticipated or rendered obvious by *Olsen*.

Without acquiescing to the Examiner's characterization of *Olsen* as applied to Applicant's dependent claims, Applicant believes it unnecessary to address each specific ground for rejection of every dependent claim in view of the clear grounds for patentability of the claims from which they respectively depend. These dependent claims include all of the limitations of the base claim and any intervening claims, and recite additional features which further distinguish these claims from the cited references. Applicant, however, reserves the right to address these rejections should the Examiner maintain the rejection of the base claims, notwithstanding Applicant's remarks presented hereinabove.

It is believed that the pending and new claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicant's Representatives, at the below-listed telephone number, if there are any questions regarding the above new claims or if prosecution of this application may be assisted thereby.

Respectfully submitted,
Crawford Maunu PLLC
1270 Northland Drive, Suite 390
St. Paul, MN 55120
(651) 686-6633 x104

Date: January 5, 2003

By: 
Mark A. Hollingsworth
Reg. No. 38,491

MAH/kam